

# **Historic, Archive Document**

Do not assume content reflects current scientific knowledge, policies, or practices.



1,942  
A2M34  
Cop. 4

# MARKETING ACTIVITIES

NOVEMBER 1955  
Volume 18, No. 11



Self Life of Fresh Produce

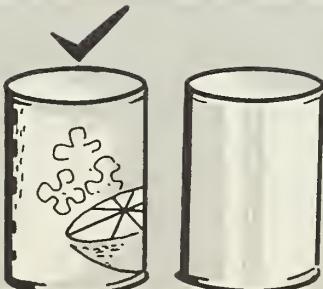


NAMO: "...Expands Market for Agricultural Products..."



SWEETENED

UN SWEETENED



LABELED

UNLABELED

Loading Potatoes in  
Subzero Weather

Automatic Lint  
Cotton Sampler

PAC Act-How It  
Affects You

New Market Opens  
in Raleigh, N.C.

NAMO Meeting  
at Madison

U. S. DEPARTMENT OF AGRICULTURE  
Agricultural Marketing Service  
Washington, D. C.

## In This Issue

### NAMO Meeting At Madison

A summary of speeches and panel discussions of the first two days of the 36th Annual Meeting of the National Association of Marketing Officials, held in Madison, Wisconsin. A report on the two concluding days of the meeting will appear in the December issue.

### Consumers' Preferences For Canned Grapefruit Juices

8

USDA's marketing researchers conducted a study in Indianapolis to determine consumers' preferences for canned grapefruit juices that varied in Brix-acid ratio, flavoring, and labeling. Hugh Bell, of the Market Development Branch of AMS, pinpoints some of the more important highlights of the research results.

### Loading Potatoes In Subzero Weather

10

A canvas windproof tunnel for use between warehouse and refrigerator car doors was developed and tested at the Red River Valley Potato Research Center, East Grand Forks, Minnesota, by Dr. J. M. Lutz and A. D. Edgar, USDA representatives. The new method offers shippers practical security from frost injury to potatoes, while loading, in return for a small investment in labor and money.

### New Market Opens in Raleigh

12

A report on the new wholesale produce market opened recently in Raleigh, North Carolina.

### Automatic Lint Cotton Sampler

14

Maurice R. Cooper, Chief, Fibers Section, Market Organization and Costs Branch of AMS, explains some of the basic operations of the automatic lint cotton sampler. The apparatus, developed by USDA, is now being built by private industry for commercial use.

### Perishable Agricultural Commodities Act

17

### Shelf Life of Fresh Produce

20

Researchers, of the Biological Sciences Branch of AMS, studied the shelf life of fresh produce by taking 25,000 temperature readings of produce on display in a laboratory equipped to simulate retail-store conditions. William E. Lewis, who worked on the project, discusses the findings of the study that are of interest to retailers.

---

MARKETING ACTIVITIES, November 1955, Volume 18, No. 11. Published each month by Agricultural Marketing Service, U. S. Department of Agriculture. The printing of this publication has been approved by the Bureau of the Budget, March 24, 1953. Copies may be obtained from the Superintendent of Documents, GPO, Washington 25, D.C., at a subscription price of \$1.50 a year (domestic), \$2 a year (foreign), payable by check or money order. Single copies are 15 cents each.

# NAMO Meeting In Madison

"Welcome to AMERICA'S DAIRYLAND!"

With these words, Don N. McDowell, Director, Wisconsin Department of Agriculture, opened the 36th Annual Meeting of the National Association of Marketing Officials at Madison, Wisconsin, on September 27.

In his report to the meeting, NAMO President W. L. Witte, spoke approvingly of the sales promotion program for agricultural products in which a number of States have engaged. "In some instances this program covers several, or all, agricultural products of the State; in others it covers only specific products. This is one of the must programs in which marketing officials must take an interest," he said.

"Along with promotion programs of individual States, close cooperation between the marketing people in any one State and this Association with the various national promotional agencies is imperative. I am referring now to the American Dairy Association, the National Livestock and Meat Board, the Poultry and Egg National Board, the School Lunch and Plentiful Foods programs, and other groups of similar nature," he said.

## DAIRY DISHES

NOURISHING AND EASY TO PREPARE

...close cooperation...to expand markets for food...

## Market Expansion for Agricultural Products

In the panel discussion on market expansion for agricultural products, Lyman McKee, vice chairman of the American Dairy Association, emphasized that promotional work is effective only when carried out on a sustained basis: "If you want to expand markets it's not enough to just get out and tell the homemaker she should use more of this, or more of that. You have to get out and sell your products, promote them."

Mr. McKee urged dairymen to expand the number of their products slowly and carefully, and to employ the findings of research--Federal, State, and private--in all their operations. He also urged that consumer acceptance of dairy products be sought on a quality basis, and not through price cutting or underselling.

Carl Neumann, general manager of the National Livestock and Meat Board, described his organization's recipe leaflet service, cooking schools, sponsorship of meat-judging contests, and other activities designed to assist in expanding markets for farm products. "We try to tell a complete nutrition story," Mr. Neumann said, "and we cooperate with everyone who is in any way concerned with that story." He also said that the Board during the last few years had been allotting more money for research grants-in-aid.

Setting aside money for grants-in-aid has been an important part of the work of the Poultry and Egg National Board also, its executive secretary, Dr. James Gwin, told the group. He stressed the importance of servicing newspapers, radio, and other media with accurate information. He showed the convention examples of the type of material used to promote the consumption of poultry and eggs, and examples of how the egg and poultry people cooperate with other food groups.

Walter P. Patterson, AMS plentiful food trades specialist, told the group that USDA's long range program of promoting the nutritional level of children's diets is, in effect, a long range project to expand the utilization of foods. He urged State marketing people to contact their plentiful foods representatives for assistance in moving local surpluses.

Willard Reese, of Wisconsin's Division of Markets, stressing the importance of promoting farm products on a State level, discussed the Wisconsin program: "We ask the various agricultural industry groups in our State to set up sales promotion budgets. Then we match these funds and assist the industries in conducting promotion campaigns." Mr. Reese cited the State Brand potato program, and the poultry and dairy programs as examples of cooperative efforts to expand use of farm products.

Professor Marvin A. Schaars, of the University of Wisconsin, told the group that the major market for farm products and the one with the greatest potential for expansion is the domestic market. "But unless we can materially increase our domestic sales, we need a foreign market of between 4 and 5 billion dollars annually for agricultural prosperity in this country," he declared. Professor Schaars pointed out that foreign markets are especially important for at least 12 major farm products.



"...study consumer buying habits, consumer attitudes..."

### Market Service Projects in State Departments of Agriculture

Don McDowell introduced the topic "Market Service Projects in State Departments of Agriculture." He said that there is a big need for co-ordination of research (1) within the State--including industry's research, (2) between States, and (3) within the USDA. He said the programs of the AMS provide an opportunity to find ways of doing away with antiquated marketing practices--the wrapping of butter in parchment as an example.

George Chick, Chief of Maine's Division of Markets, told the group that all members should be thoroughly familiar with the responsibilities of the different agencies for different lines of work. "In Maine we cooperate very closely with our experiment station," he said. "As a result we have sometimes been able to inaugurate service projects even before research results have been published. Also, we have matched funds with industry groups and have worked very closely with many of the agricultural groups."

William C. Crow, of AMS, said that one of the purposes of the Agricultural Marketing Act of 1946 is to encourage State Departments of Agriculture to broaden and improve their work in the marketing service field by helping finance such expansion. Currently, he said, there are 99 projects being carried on in 36 States and 3 Territories, and Federal funds available for the work have nearly doubled in 2 years. Kinds of work being done include (1) providing basic data, (2) expansion of outlets, (3) reducing deterioration and spoilage, and (4) reducing the cost of marketing.

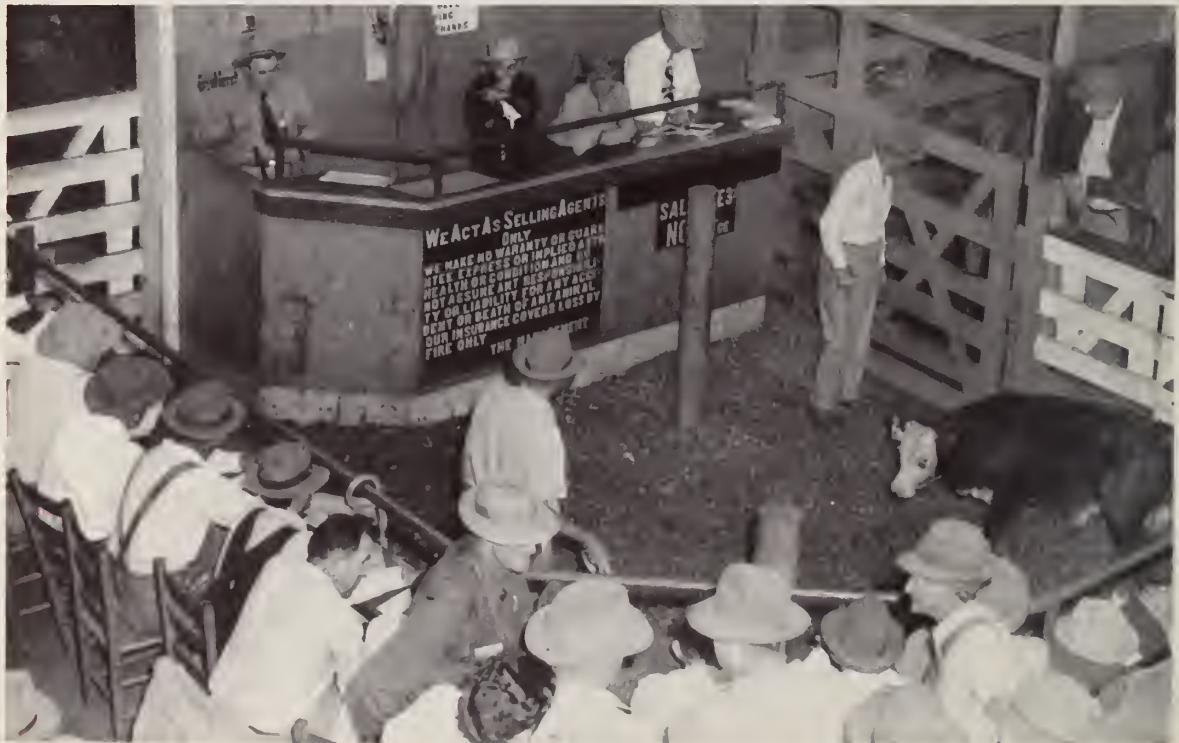
Mr. Crow also stated that USDA has helped States draft legislation to establish or improve marketing divisions, helped them to analyze their marketing program needs and draft useful projects, and has sent specialists to the States to help them set up some of the work. He also pointed out that USDA has compiled the results of work in all States, and has made the experience of all States available to each State,,in a USDA publication entitled MARKETING SERVICE PROGRAMS CONDUCTED BY STATE DEPARTMENTS OF AGRICULTURE, AMS-56. (October 1953-September 1954).

In addition the Department has sent people into the States to review the work and make suggestions for its improvements, has helped plan and operate schools or workshops each year at which State people can get together to develop ways of doing a better job. And USDA has sent research results regularly to people who can use them. In all of this, Mr. Crow concluded, USDA has had the guidance and support of a Committee of State Commissioners of Agriculture and Directors of Markets.

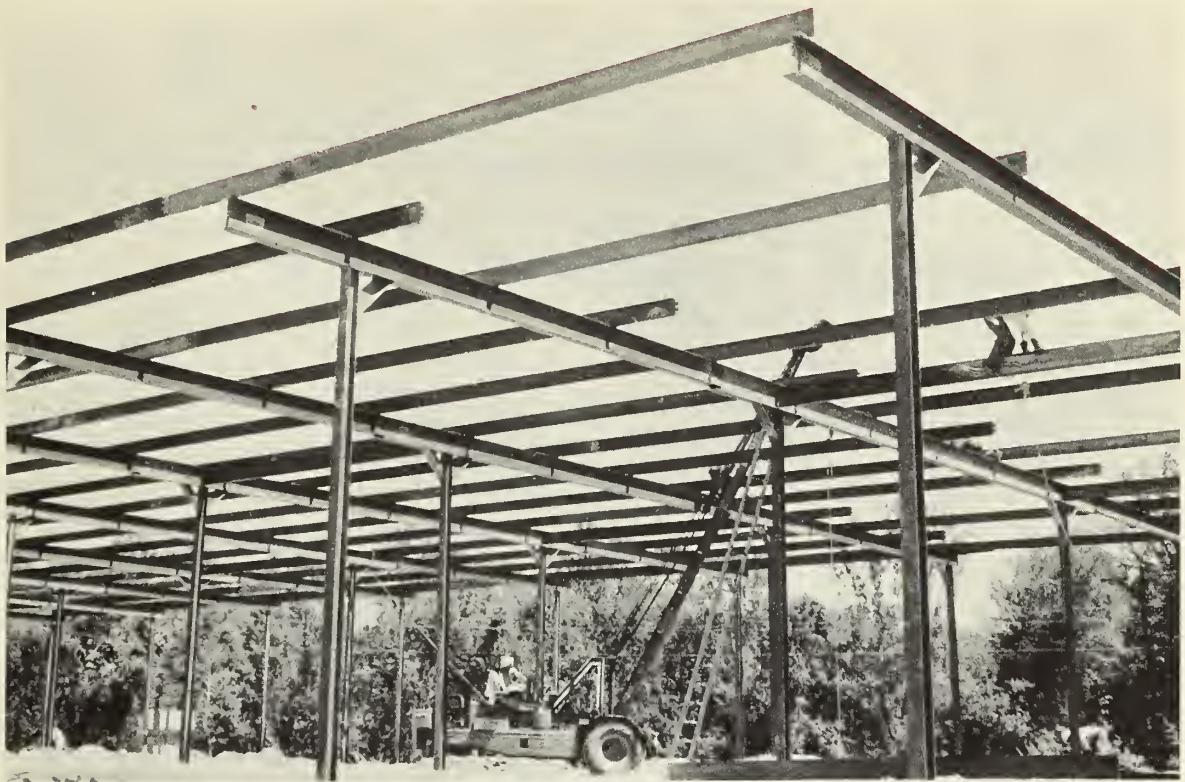
### Improving and Utilizing Market Facilities

F. W. Risher, of Florida, stated that farmers' markets in some areas of that State have been enlarged to meet the need for better handling of crops or livestock. He said schools have been held on each market, and they were designed to improve the grades of products brought to the markets by producers or haulers.

These markets, set up either for crops or livestock, are located in the production areas for assembling, grading, packing, and selling.



\*...discussed ways to improve auction markets and...



"...decision...to alter existing...or to construct a new one..."

John Winfield, of North Carolina, who introduced the topic in this discussion, said that there are two questions of primary importance to consider before the decision is made to alter an existing facility or to construct a new one to improve market acceptability of an agricultural product. They are: (1) What will it cost, and (2) will it really improve trade acceptance of the commodity. He said that in North Carolina they have found that attractive packaging, convenient usage, and quality in an agricultural product will stand a sizeable cost load.

Lloyd Mowrer, manager, described to the marketing officials the program and progress of the Lake Land Egg Cooperative at Valders, Wis. He said this co-op set forth to: (1) Improve egg quality, (2) improve the grading program, and (3) improve the marketing.

Extension people assisted in setting up a simple program--quality production of eggs that consumers would buy with assurance. The co-op started packing eggs under supervision of a USDA inspector. Then the co-op started marketing its eggs through an organization whose brand name was nationally and favorably known. Results: Co-op expanded from 2 to 28 counties; volume increased; and producers got more for their eggs.

Mr. Crow also participated in this discussion. He said several factors are causing increased interest in improving marketing facilities. Among them are pressures to reduce costs, population growth, production of new products in some areas, and changes in form in which products are marketed (frozen, eviscerated, prepackaged).

# Consumers' Preferences For Canned Grapefruit Juices

By Hugh P. Bell

Here's a report on a consumer preference survey made in Indianapolis, Indiana, of interest to processors of canned grapefruit juices and to other trade groups who merchandise these products.

Marketing researchers of the Market Development Branch, Agricultural Marketing Service, recently conducted a study to determine consumers' preferences for canned grapefruit juices that varied in Brix-acid ratio, flavoring (sweetened versus unsweetened), and labeling.

They found that consumers prefer sweetened over unsweetened juices and labeled, whether "sweetened" or "unsweetened," over unlabeled juices.

The juices used in the test included unsweetened juices at Brix-acid levels of 7, 9, 11, and 13 with degrees Brix constant at 10. Sweetened juices had ratios of 9, 11, 13, and 15 with degrees Brix constant at approximately 12. The ratio ranges used in the tests were recommended by the Florida Citrus Commission and others in the citrus industry.

## Study Made in Indianapolis

The juices were tested in 640 randomly selected households by over 1,300 people (16 years old and over) in Indianapolis, Indiana. One-half of the group received labeled juices and the other half unlabeled juices. Each juice was rated by from 140 to 190 persons.

The first week each household received one of the eight juices. One week later they received another juice. Each person rated a given juice on 3 consecutive days; a week later, another juice on 3 consecutive days. Juices were assigned in such a manner that every possible combination of any 2 juices occurred. The juices were kept under refrigeration and served chilled. Fresh cans were used on each of the three days.

Each person was asked to express his or her opinion about each juice by placing a check on a 10-point rating scale. The juice could be rated "very poor" through "excellent."

Consumers preferred sweetened juices over the unsweetened juices. Labeled juices, whether labeled "unsweetened" or "sweetened," were preferred over unlabeled juices. Within the unsweetened juices, the juice at 7 Brix-acid ratio was least preferred. There was no significant differences in the ratings of the sweetened juices at levels from 9 to 15.

The juices at 9 Brix-acid ratio represent the ratio at which the most preferred juices begin to be encountered. Among the unsweetened juices a shift from a 7 to 9 ratio brings the juices to a plateau of preference that extends through the 13 Brix-acid ratio. Among the sweetened juices the preference plateau extends from 9 to 15 Brix-acid ratio.

### **Tested Willingness to Buy and Serve Juices**

The pattern of the preference ratings, based on the taste tests, does not necessarily reflect upon the degree that people would actually like to have the product served in their homes. Nor does it necessarily reflect the homemakers' reactions toward buying the product, and whether or not their buying reactions reflect the pattern of their family's wishes. To investigate these relationships, the respondents', including homemakers, willingness to have each juice served in his home, was ascertained. Also, the homemakers' willingness to buy the respective juices was ascertained in a like manner.

The resulting preference pattern of the respondents' expression of willingness to serve and buy the respective juices for their homes was generally the same as the pattern based on the sweetened and unsweetened and labeled and unlabeled preference ratings.

The highest proportions of positive expressions of willingness to have the juices served were found among those respondents who had tested labeled juices and those who had tested sweetened juices. Within the sweetened and unsweetened juices, respectively, the pattern was similar to those based upon the preference ratings.

### **Comparison With Other Citrus Products**

In addition to determining the preference of the canned grapefruit juices, the relative preference position of the test juices was determined among competing citrus products. Each person was asked to compare each juice he had tested with frozen orange juice, frozen grapefruit juice, and canned orange juice.

Frozen orange juice was generally preferred over the unsweetened canned grapefruit juices tested. Unsweetened canned grapefruit juices with the exception of the juice at 7 Brix-acid ratio, were preferred over canned orange juice. Frozen grapefruit juice was the least preferred in each comparison.

On the other hand, when the sweetened grapefruit juices were compared with the other products, each of the test juices, with the exception of one, were ranked first. Frozen orange juice was second in preference, with canned orange juice third and frozen grapefruit juice fourth.

However, the persons making these comparisons included some who had not used frozen orange within the last year. Sixty-nine percent of the households had used frozen orange juice within the last year. Among these persons frozen orange juice was preferred over each of the test canned grapefruit juices.

# Shipping Potatoes In Subzero Weather

By A. D. Edgar

A windproof canvas tunnel enables shippers to load potatoes from warehouse to refrigerator car in subzero temperatures without danger of frost injury. This economical device, developed by the U. S. Department of Agriculture in cooperation with the Red River Valley Potato Growers' Association, University of Minnesota, and North Dakota Agricultural College, is helping to relieve the shipping problem that has occurred in the cold North Central States.

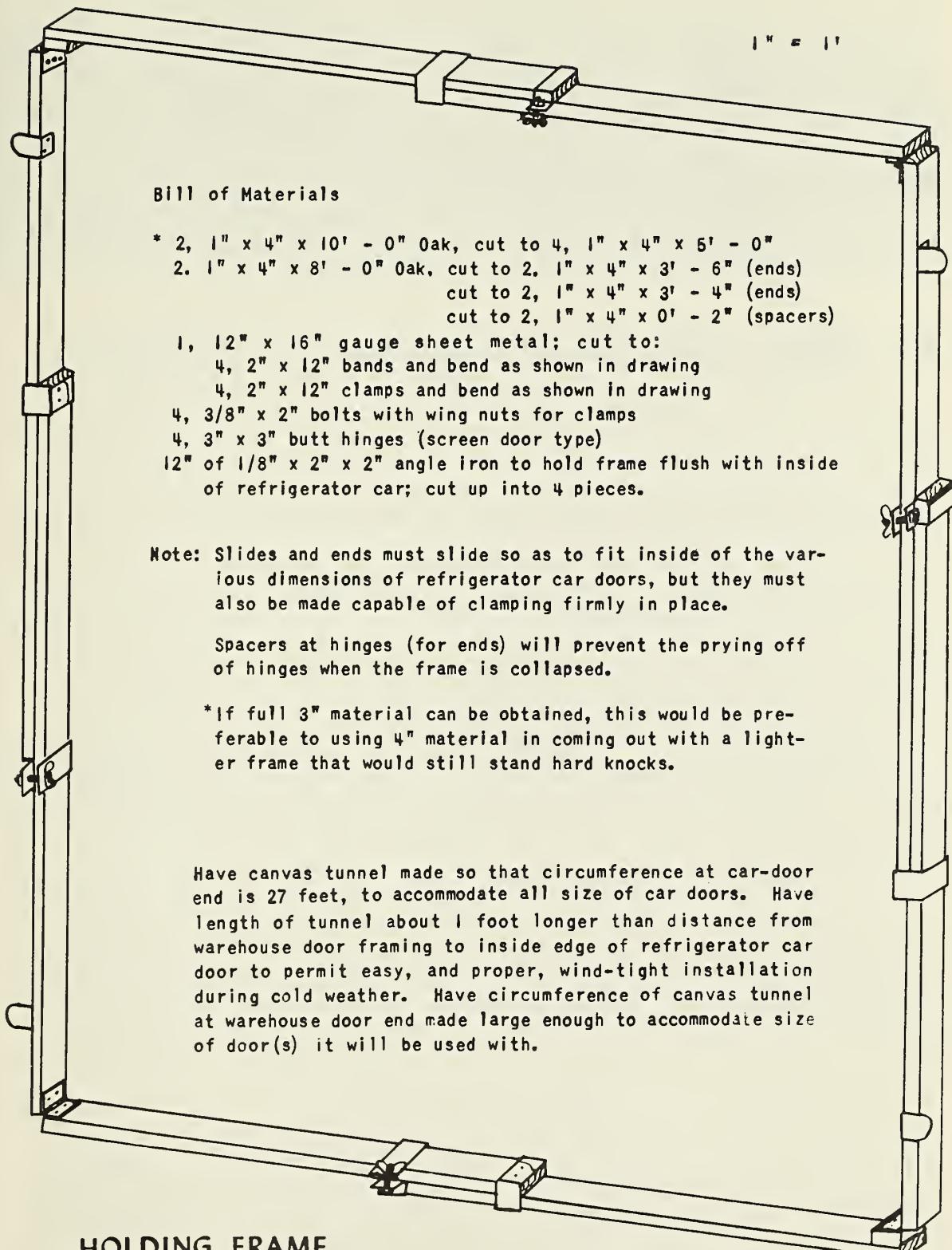
Up to now, railroads discouraged shippers from loading at temperatures below  $-5^{\circ}\text{F}.$ , because of the excessive number of claims they got for frost damage to potatoes in transit. These restrictions have been costly to potato shippers too. They are unable to supply customers regularly and they cannot "cash in" on seasonal price peaks.

Investigations revealed that wind was the key factor in frost injury to potatoes moved from warehouses to preheated refrigerator cars in subzero weather. In  $-20^{\circ}$  weather a little wind pulls  $2^{\circ}$  of heat a minute from the inside temperature of preheated refrigerator cars.

The tunnel is fixed and held in place in the car door with an adjustable holding frame (see page 11). These frames can be bought or may be homemade. Canvas, 15- or 20-ounce, provides adequate wind protection.

The tunnel's circumference should be 27 feet at the car-door-end in order to fit the several sizes of car doors. The warehouse end of the tunnel should be made large enough to fit the inside frame of the door to which it will be attached. The tunnel should be at least 1 foot longer than the distance between the warehouse and car doors. A folded edge sewed into the car-door-end with a half-inch rope drawn through it makes snugging into the car door with the adjustable holding frame easy.

Danger from carbon monoxide gas is always present in any refrigerator car using a charcoal heater. The windproof tunnel adds to this danger so two men should be working together in servicing and loading these refrigerator cars. If at all possible, and if weather and carrier permit, a little opening should be left between the top of the canvas tunnel and the top edge of the car door.



#### Bill of Materials

- \* 2, 1" x 4" x 10' - 0" Oak, cut to 4, 1" x 4" x 5' - 0"
- 2. 1" x 4" x 8' - 0" Oak, cut to 2. 1" x 4" x 3' - 6" (ends)  
cut to 2, 1" x 4" x 3' - 4" (ends)  
cut to 2, 1" x 4" x 0' - 2" (spacers)
- 1, 12" x 16" gauge sheet metal; cut to:  
4, 2" x 12" bands and bend as shown in drawing  
4, 2" x 12" clamps and bend as shown in drawing
- 4, 3/8" x 2" bolts with wing nuts for clamps
- 4, 3" x 3" butt hinges (screen door type)
- 12" of 1/8" x 2" x 2" angle iron to hold frame flush with inside  
of refrigerator car; cut up into 4 pieces.

Note: Slides and ends must slide so as to fit inside of the various dimensions of refrigerator car doors, but they must also be made capable of clamping firmly in place.

Spacers at hinges (for ends) will prevent the prying off of hinges when the frame is collapsed.

\*If full 3" material can be obtained, this would be preferable to using 4" material in coming out with a lighter frame that would still stand hard knocks.

Have canvas tunnel made so that circumference at car-door end is 27 feet, to accommodate all size of car doors. Have length of tunnel about 1 foot longer than distance from warehouse door framing to inside edge of refrigerator car door to permit easy, and proper, wind-tight installation during cold weather. Have circumference of canvas tunnel at warehouse door end made large enough to accommodate size of door(s) it will be used with.

#### HOLDING FRAME



## A New Market Opens In Raleigh

A new wholesale food market opened for business in Raleigh in September. It is the first of its kind in the State of North Carolina. Located on a 65-acre site 3 miles northeast of the Raleigh downtown section and adjoining U. S. Highway No. 1, the market was built to meet today's needs and planned for expansion tomorrow--only half of the area is now in use.

This new market is an outgrowth of a produce-market study made in 1950 by USDA in cooperation with the North Carolina Department of Agriculture and North Carolina State College. The study indicated that the wholesale produce marketing facilities in Raleigh were inadequate and recommended that a new market be constructed in a new location.

The new market, "Raleigh Farmers Market," is privately owned. It was financed by a local group and by a loan from an insurance company. Technical assistance in the layout and construction of the market was provided by USDA and the Markets Division, North Carolina Department of Agriculture.

A 40-foot-wide paved road, approximately 200 feet long, connects the main gate with U. S. Highway 1. More than 30 acres of the market are fenced in and 2 of these acres are under roof. The main buildings run east and west to afford protection from the sun. The area is well-lighted as most of the trading is done at night or in early morning. Streets are 150 feet wide for easy tractor-trailer handling within the market. Both incoming and outgoing trucks can be handled simultaneously.

The wholesale produce building is L-shaped and contains 36 units that house 14 wholesalers. Each unit is 22-1/2 feet wide and 100 feet deep. All units are equipped with refrigeration facilities. Twenty-eight of the wholesale units are serviced at the rear by a double-rail spur track; 8 units do not have rail connections. The rail platform is 10 feet wide. The front of these buildings is spanned by a 24-foot, truck-bed-height platform which serves for display and in-and-out loading. Both the rear and front platforms are canopied. The units inside are 66 feet deep.



The farmers and truckers shed is designed to provide the farmer with one-stop service. The farmer can bring his produce to the shed, get bids from a number of merchants at one time, sell his produce there and be paid there. He will pay a fee of 3 percent on gross sales, but no fee will be collected if he decides not to sell.

Adjoining the market property is the largest chain store warehouse in the section, serving 92 retail stores. Under construction nearby are a new million-dollar warehouse by another large chain store company and a wholesale feed, seed, and farm equipment supply warehouse. The Raleigh branch of one of the largest meat packers has contracted for a site on the market.

### **Trading Area**

A total of about 10,000 equivalent carloads of fruits and vegetables and about 450 equivalent carloads of poultry and eggs were marketed in Raleigh during 1954. Farmers of central and eastern North Carolina and truckers brought in over three-fourths of all produce receipts.

About 30 percent of the combined volume of fruits, vegetables, eggs, and poultry were consumed locally. The remainder is distributed outside of the city, mostly within a radius of 100 miles.

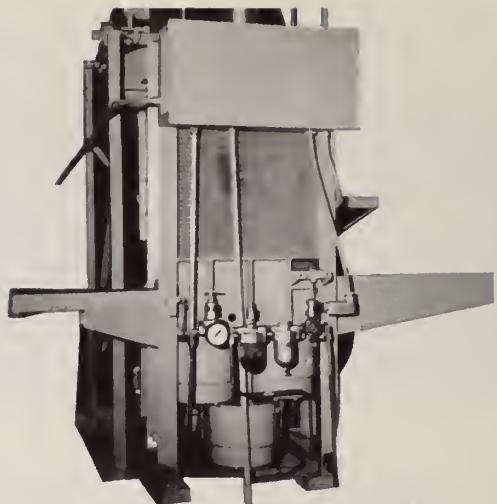
Geographically, the market is in a good location--almost mid-point between the heavy producing areas to the south, such as Florida, Georgia, and South Carolina, and the heavy consuming areas to the north. The heavy vegetable production area of the State, from Raleigh to the Atlantic Coast, is within easy reach.

### **Transportation Facilities**

Raleigh has excellent transportation facilities. Three railroads serve the area; more than 25 freight trains move in and out of the city every 24 hours. The area is served by a network of nine paved highways. The principal highways handling heavy traffic loads are U. S. 1 and 15A, which are north-south highways; U. S. 64, 70, and 70A, which are east-west highways. Plans are underway to connect U. S. 1 and 1A near the new market.

# Automatic Lint Cotton Sampler

By Maurice R. Cooper



Automatic lint cotton samplers which reduce the need for costly sampling by hand are being built by private industry. Between 20 and 25 of these samplers will be installed in California for use this season. The apparatus, developed by the U. S. Department of Agriculture, produces a sample representative of the cotton throughout the bale and reduces bale mutilation.

Installing the sampler, which produces a sample while the bale is being ginned, is mechanically feasible in most types of saw-gin outfits. It can be integrated with the existing gin machinery with a minimum of rearranging. The sampler is adapted for either continuous or intermittent service and its operation can be handled by the regular gin crew without employing extra or skilled labor.

Before their commercial installation the Agricultural Marketing Service had the samplers under commercial test in Gilbert, Ariz., and Buttonwillow, Calif. At present, AMS marketing researchers are conducting studies of the sampler in a Red Springs, N. C., gin. They are studying the advantages and disadvantages of automatic and conventional-cut samples and the modification necessary in marketing to allow effective use of the new type samples.

These studies are expected to indicate the extent to which use of such a sampler and automatic samples affect costs and practices of cotton ginners, merchants, warehousemen, and spinners in many of the important southeastern markets. Marketing researchers hope that the sampler eventually will prove adaptable to most of the several types of marketing operations throughout the Cotton Belt.

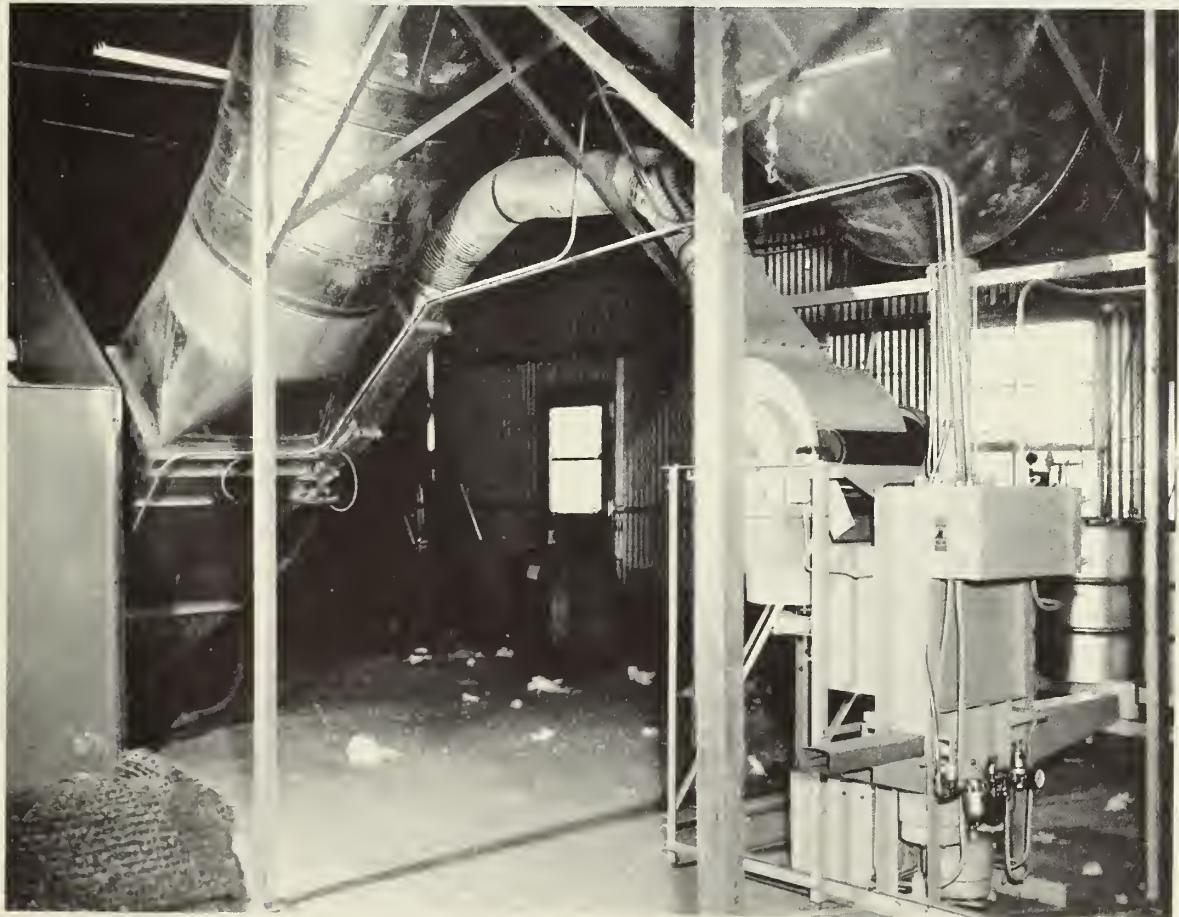
Today, practically all cotton samples are cut from the bale after ginning. Hand samplers slash into the bagging on each side of the bale--usually with a sharp, heavy knife--and pull a small amount of cotton from each hold to make up their sample. Generally, each bale is sampled from 3 to 5 times during marketing. These samples often are not truly representative of the bale since they consist of cotton removed from the outer surfaces and do not provide a true cross-section of the contents.

Repetition of sampling results in considerable mutilation of the bale bagging and is costly in terms of the amount of cotton removed at each sampling. Cotton in open sample holes is exposed to excessive weathering and to contamination or soiling by oils, dirt, and other foreign substances.

The sampler basically consists of a valve; a conveyor system composed of a booster, duct, and condenser; and an automatic packaging press. The valve has been streamlined similar to an airplane wing. It is located across the mouth of a branch duct in the gin lint flue, between the gin condenser and the gin stand nearest it.

Cotton removed by the sampling valve is conveyed to the packaging press by a pneumatic system. The booster, located at the base of the branch duct, is similar in principle to that of the injectors used on many steam boilers. The duct is lightweight-rubber ventilating hose, with wire reinforcing, that makes installation relatively easy. The condenser is a small reproduction of a standard single-drum gin condenser.

Basically, the packaging press is a single-box cotton press, operated by compressed air cylinders and controlled automatically.



Automatic sampler installed in cotton gin.



Samples produced by automatic sampler.

The mechanical sampler extracts, accumulates, presses, and packages a consecutive series of portions of lint cotton taken from the lint flue during the ginning of a bale.

The sampler goes into automatic operation when the ginning of a bale is started. The wing-shaped valve swings out into the stream of lint cotton at regular intervals to divert a portion of it through the duct to the condenser. By opening the valve periodically during the ginning of a bale, a cross section of the contents of the bale is obtained.

Once in the duct the cotton is conveyed to the condenser by the same air that is used in the flue. The booster not only reduces the back pressure in the duct but it also serves to clear the duct once the valve is closed. The cotton passes through the hose duct to the condenser where a good bat, 18 inches wide, is doffed into the press readily and completely.

Each segment of the sample is tramped in the press and the accumulated segments are compressed to bale density and ejected into the sample wrapper. The sample is delivered before the cotton bale, which it represents, is turned out of the gin press.

The complete sample, weighing 12 to 16 ounces, is packaged in a paper wrapper. The wrapped sample is approximately 18 inches long and about 4-1/2 inches across. It can be cut into 2 pieces to provide duplicate samples. The sampling process is set to take 8 to 10 segments of the sample during the ginning of a 500-pound bale.

# Perishable Agricultural Commodities Act

A long-distance telephone call from a shipper in California to a dealer in New York results in an agreement that diverts a carload of celery from Philadelphia to New York. Three weeks later the shipper accepts under protest a \$900 check from the buyer. He claims that the buyer owes him an additional \$500 for the celery. The buyer refuses to pay the \$500 contending that the shipper agreed that the price of the celery would be decided upon after arrival at destination. But the shipper says that the buyer agreed on a definite price prior to the diverting of the car.

After days of communicating with each other by telephone and by wire, the buyer and the shipper fail to reach an agreement.

The shipper writes a letter to the Regulatory Branch, Fruit and Vegetable Division, Agricultural Marketing Service, USDA, Washington 25, D. C., describing the dispute. This Branch administers the Perishable Agricultural Commodities Act, which was created to protect growers, shippers, commission merchants, brokers, and dealers from unfair and fraudulent practices in the marketing of agricultural commodities in interstate and foreign commerce.

## Informal Arbitration

The Branch contacts the buyer for his version of the story and attempts to settle the matter informally. This cannot be accomplished. But the buyer and the shipper consent in writing to informal arbitration and agree to accept the Branch's decision as final. The facts, in the form of all pertinent papers, records, and other testimony, are collected and sent to Washington for the Branch to study and evaluate.

While it is evident that both sides decided on a price after the arrival of the car of celery, there is nothing conclusive to show that the buyer agreed on the price that the shipper demands. The Branch decides that a price equivalent to the reasonable market value of the celery at the time of arrival will be paid to the shipper.

The buyer mails a check for \$200 to the Branch; it is forwarded to the shipper. The case is closed. The entire matter has been settled quickly, inexpensively, and without publicity or lengthy litigation.

This is an example of the more than 2,500 complaints handled by the Branch each year resulting in the recovery of well over \$1,000,000 for the victims of unfair and fraudulent practices.

More than half of these complaints allege failure to account and pay; a fourth, rejection without reasonable cause or failure to deliver. About 90 percent of the cases are settled informally; some involve just a phone call. The rest of the cases are handled by formal action.

Most formal cases result in reparation orders and the publication of facts. Parties adversely affected by a reparation order may appeal to the U. S. District Court. Failure to pay a reparation order or file an appeal within 30 days results in the suspension of license to engage in business that comes under the Act. The Branch will initiate penalty and injunction proceedings against any operator who continues business after the suspension of his license.

Anyone who has reason to believe that the Act has been violated may file a request for relief. A phone call, telegram, or letter setting forth what has happened should be sent to the Branch. A complainant should relate such details as names and addresses, dates, car numbers, terms of sale, etc.

### **Investigation If Necessary**

The Branch will promptly contact the other party, make an investigation if necessary, and try to bring about an informal adjustment. Each party is afforded an opportunity to present its side fully. The Branch will determine the loss or amount of damages to be paid.

The Federal or Federal-State fruit and vegetable inspection service is available to determine the grade, quality, or condition of the produce which may be the subject of the dispute.

Under the PAC Act, commission merchants, dealers, and brokers handling fresh or frozen fruits and vegetables in interstate or foreign commerce must obtain a license. This includes truckers who buy or sell in quantities totaling one ton or more and large retailers buying in wholesale quantities of one ton or more a day more than 20 times in a calendar year. Farmers only selling products of their own raising are not subject to license.

Under the Act, fresh fruit and vegetables include all products generally considered by the trade as perishable, regardless of whether they are frozen or unfrozen and including cherries in brine which are specifically covered by the Act. It does not include vegetables and fruit dried or manufactured into food articles of different character.

Licenses are obtained by applying to the Regulatory Branch, Fruit and Vegetable Division. The application should be accompanied by a \$15 fee. About 27,000 licenses were in effect at the end of the last fiscal year. The penalty for operating without a license is rather severe: not more than \$500 for each offense (each transaction is considered an offense) plus \$25 for each day the offense continues. If the offense is not considered willful an accrued fee is collected from the date of the first operation through the time the application is received and no penalty is invoked.

## Industry Sponsored Act

The members of the fruit and vegetable industry designed and sponsored the Act. They wanted Congress to put into effect a law that would suppress unfair and fraudulent practices. The Act requires licenses for operators, prohibits improper practices, specifies that accurate and detailed records be kept, authorizes investigation of complaints.

The Act also prohibits such unfair practices as rejection and failure to deliver without reasonable cause; false and misleading statements; incorrect accountings on consignment; failure to pay promptly for commodities purchased or received on consignment; misbranding or misrepresenting the grade, quality, condition, or State or county of origin; and altering Federal inspection certificates.

The original Act was passed in 1930. Since that time 8 amendments have been made. The last one authorized an increase in the license fee from \$10 to \$15 a year. The others were designed to strengthen the position of the honest dealer.

The Branch maintains field offices in Chicago, Fort Worth, Los Angeles, New York, and Winter Haven, Fla. A staff of about 26 investigators handle the hundreds of cases encountered each year. They are moved from one part of the country to another to handle unusually heavy loads in certain areas at different times in the year.

The Branch also investigates complaints involving Alaskan and Hawaiian operators. It has a reciprocal working arrangement with Canada and also handles complaints against foreign concerns with offices located in the U. S.

---

### **PACKING IN SEALED FILMS MAINTAINS APPLE AND PEAR QUALITY**

The marketing season of certain varieties of pears and of Golden Delicious apples can be extended several weeks by using film box liners, according to a study recently completed by the Agricultural Marketing Service. The appearance, storage life, and dessert quality of these fruits are maintained better by packing the fruit in films. Sealed liners are used for pears and unsealed ones for apples.

Pears stored in boxes with sealed film liners had a fresher appearance and were less shrivelled several days longer during marketing than pears packed without liners. Also, by using these sealed liners, certain varieties of pears are made available on the market 6 to 8 weeks longer than would otherwise have been possible.

The film liners greatly enhanced the appearance and dessert quality of the apples, especially after prolonged cold storage. By the use of the liners, it is possible to maintain freshness over a long storage period. When packed in film-lined boxes, these apples retained the flavor which is characteristic of the variety early in its storage life.

# Shelf Life Of Fresh Produce

By William E. Lewis

Researchers of USDA's Agricultural Marketing Service at Beltsville, studying quality maintenance in fresh fruits and vegetables, have come up with some findings of importance to retailers displaying fresh produce in cases. These findings indicate that:

1. Fruits and vegetables that retain good quality best at low temperatures should be stored overnight in rooms at 32° to 40° F., or in iced produce barrels if displayed during the day in nonrefrigerated display racks.
2. Fruits and vegetables that are benefited by moderate refrigeration (about 40° to 55°) but are subject to chilling injury at low temperatures (32° to 40°) may be displayed on raised false racks in refrigerated cases or in nonrefrigerated cases during the daytime and stored at night at temperatures above 40°. They should not be displayed for more than a few hours in an ice-bed case or in mechanically refrigerated cases where bottom layer temperatures are 40° or lower.
3. Cooling effects of night refrigeration extend well into the following day. These cool temperatures not only minimize harmful effects from condensed moisture but also permit sprinkling with water several times daily to prevent excessive wilting.

Retailers use various handling practices to control temperatures of fresh fruits and vegetables as temperature is the most important factor in the shelf life of these commodities. In some stores mechanically refrigerated or ice-bed cases are used to keep produce cool during both day and night; in other produce is displayed in nonrefrigerated cases during the daytime and held in "walk-in" coolers or in iced produce barrels at night.

A knowledge of temperatures that may be expected in produce in different parts of a display case, as well as average temperatures obtained under different handling practices is important if the produce is to be kept under optimum conditions for retarding decay or other deterioration.

Researchers studied the shelf life of the fresh produce by taking 25,000 temperature readings of produce on display in a laboratory equipped to simulate retail-store conditions. The display period for all produce studied began between 8 and 9 in the morning and ended between 6 and 7 in the evening. The display room air temperatures averaged 75° F.

Temperatures of the produce were taken at the front and back of the racks in the top and bottom layers in each lot. The produce usually was about 6 to 8 inches deep and extended from the front to the back of each rack.

Here's five different display methods studied by the researchers and the results of their findings:

### **Displayed Continuously in Nonrefrigerated Case**

1. Produce displayed continuously in a nonrefrigerated 6-foot wooden display case with galvanized metal bottom and sides. A slatted rack sloped from 8 inches above the bottom at the back of the case to 1 inch at the front. The distance from the front to the back of the case was 30 inches.

**Findings.**--Temperatures of produce averaged 70° F., or 6 degrees below the display room air temperature, probably because of evaporation of body moisture from the produce. Temperature differences between top and bottom layers were negligible.

The 70° average temperature obtained during the studies is satisfactory only for fruits and vegetables that do not require refrigeration during display, such as avocados, bananas, sweetpotatoes, winter squash, or, possibly, for other produce that is in the display case for one day.

### **Nonrefrigerated Case at Daytime, Walk-in Cooler at Night**

2. Produce displayed during daytime in the same nonrefrigerated case but stored in 32° and 40° F. "walk-in" coolers at night.

**Findings.**--Produce temperatures averaged 46° and 51°, respectively, for a 24-hour period. Temperatures varied from about 65° at the end of the daytime display period to 33° and 42° after night storage in the 32° and 40° rooms. Temperatures of produce displayed in the top and bottom layers were approximately the same.

Night temperatures of produce stored in the 32° and 40° F. rooms averaged 39° and 46°, respectively, and the daytime temperatures, 55° and 57°. Although the 24-hour averages indicate desirable temperatures for most produce, the high daytime temperatures may favor some decay or other deterioration that cannot be entirely offset by the benefits of night refrigeration. Also, low temperatures to which the produce is exposed at night in the refrigerated rooms might result in damage to fruits and vegetables sensitive to cold injury such as cucumbers, eggplants, sweet peppers, and limes.

### **Raised False Rack in Convection Case**

3. Produce displayed continuously on raised false bottom rack in a 10-foot commercial, convection-type mechanically refrigerated open display case. The regular rack provided with the case was 3 inches above the bottom at the front and 5 inches at the back. To simulate retail-



Left, broccoli displayed on false rack; right, displayed on regular rack.

store display methods part of the case was equipped with an elevated false bottom rack constructed of 1/4-inch mesh wire screen about 7 inches above the regular rack. Produce displayed on both types of racks was covered at night with burlap or heavy kraft paper.

**Findings.**--Produce displayed on a raised false rack in convection case had an average temperature of 60° F., while produce displayed on the regular rack averaged 43°. Therefore, temperatures on the false rack were more favorable to decay than on the regular rack. Temperatures of produce in the top layer on the false rack averaged only 5 degrees lower than that of produce displayed continuously in a nonrefrigerated case. Under each of these display methods, temperatures in the top layers were materially higher than those in the bottom.

Fruits and vegetables that are benefited by moderate refrigeration but sensitive to cold injury at low temperatures could be displayed to advantage on the raised false rack. However, the high temperatures would accelerate decay and other deterioration in fruits and vegetables that require low temperatures for best keeping quality.

#### Forced-Circulation Case and Regular Rack in Convection Case

4. Produce displayed continuously in a 10-foot commercial, forced-circulation-type mechanically refrigerated case and on regular rack in convection-type case. The rack was about 13 inches high at the back and sloped to about 1 inch high at the front. The produce was not covered at night.

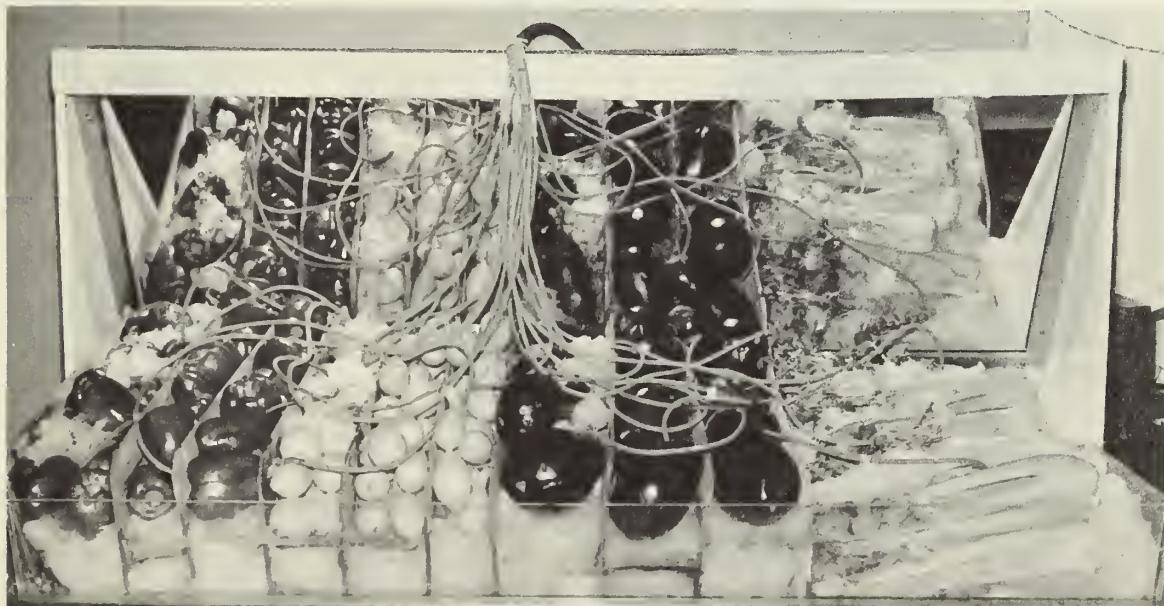
**Findings.**--Temperatures of produce displayed on the regular rack in the convection-type case and in the forced-circulation cases were the same, averaging  $43^{\circ}$  for each type of display. Temperatures of both cases averaged about 8 to 10 degrees higher in the top than in the bottom layers. Produce temperatures in the top layer in both cases averaged 23 degrees lower than those of produce displayed continuously without refrigeration.

Temperatures found under these handling practices would provide good refrigeration for most produce, but temperatures of  $40^{\circ}$  and lower in the bottom layer could be harmful to sweet peppers, cucumbers, and other produce that may be injured at temperatures below  $45^{\circ}$ .

### Insulated Ice-Bed Case

5. Produce continuously displayed in a 5-foot commercial, insulated ice-bed case. The produce was arranged on a bed or crushed ice 3 to 5 inches deep spread over the bottom of the case. The ice bed was replenished once each day. Some lots of produce were garnished with a thin layer of crushed ice in the morning, at noon, and in midafternoon. Other lots were top-iced only at night when the produce was prepared for night storage; some of these lots were sprinkled with tap water 4 times daily while duplicate lots were not sprinkled. At 6 in the evening all lots of produce in the ice bed were covered with a thick layer of ice and with burlap or heavy kraft paper.

**Findings.**--In the ice-bed case temperatures of produce garnished with ice several times daily and top-iced at night averaged  $42^{\circ}$  F. The temperature of produce top-iced only at night and sprinkled or not sprinkled with water during the daytime averaged  $47^{\circ}$ . These differences should have little effect upon quality of the produce because of the relatively short display period in retail stores.



Thermocouples used to obtain temperatures in ice-bed display case

U. S. Department of Agriculture  
Agricultural Marketing Service  
Washington 25, D. C.

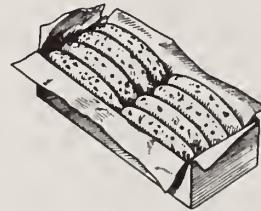
Penalty for private use to avoid  
payment of postage \$300

OFFICIAL BUSINESS

SPECIAL *Plentiful Food* PROGRAM

---

# PORK . . .



Supplies of pork products are liberal--and they will continue liberal through the fall months, as marketings increase. In addition, supplies of all meats are at record high levels. USDA is cooperating with hog producers and the food industry in this program on pork. The campaign is already under way and will continue for several weeks, over the period of seasonally increasing supplies.